

U.S. Patent Application No. 09/857,490  
Amendment dated January 16, 2004  
Reply to Office Action of October 16, 2003

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

Claim 1 (currently amended): A furnace carbon black producing process wherein off-gas from a carbon black furnace is dewatered and heated, following substantial removal of carbon black therefrom, and fed as a combustion gas feed stream to a burner portion of the same or a different carbon black furnace, wherein said carbon black is produced by a fuel rich process.

Claim 2 (original): The furnace carbon black producing process in accordance with claim 1, wherein the heated, dewatered off-gas is employed in a deep fuel rich combustion strategy without other combustible gas feed streams to the burner.

Claim 3 (original): The furnace carbon black producing process in accordance with claim 1 wherein the heated, dewatered off-gas is dewatered by means of pressure swing absorption.

Claim 4 (original): The furnace carbon black producing process in accordance with claim 1 wherein the off-gas is subjected to plasma heating subsequent to removal of carbon black therefrom and prior to being fed to the burner.

Claim 5 (original): The furnace carbon black producing process in accordance with claim 1 wherein an oxidant gas feed stream to the burner is subjected to plasma heating prior to being fed to the burner.

Claim 6 (original): The furnace carbon black producing process in claim 1 wherein hydrocarbon feedstock is subjected to plasma heating prior to being fed to the furnace.

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Claim 7 (original): The furnace carbon black producing process of claim 1 wherein combustion gases produced in the burner by combustion of the heated, dewatered, off-gas with an oxidant gas feed stream are subjected to plasma heating prior to contacting make hydrocarbon feedstock in the reactor of the carbon black furnace.

Claim 8 (original): The furnace carbon black producing process of claim 1 wherein the oxidant gas feed stream to the burner comprises air plus oxygen enhancement, wherein the oxygen enhancement is produced by a pressure swing adsorption process.

Claim 9 (withdrawn): A furnace carbon black producing process wherein plasma heating is used.

Claim 10 (withdrawn): The furnace carbon black producing process in accordance with claim 9 wherein off-gas is subjected to plasma heating subsequent to removal of carbon black therefrom and prior to being fed to a burner portion of the same or a different carbon black furnace.

Claim 11 (withdrawn): The furnace carbon black producing process in accordance with claim 9 wherein an oxidant gas feed stream to a burner portion of the same or a different carbon black furnace is subjected to plasma heating prior to being fed to the burner.

Claim 12 (withdrawn): The furnace carbon black producing process in claim 9 wherein hydrocarbon feedstock is subjected to plasma heating prior to being fed to the furnace.

Claim 13 (withdrawn): The furnace carbon black producing process of claim 9 wherein combustion gases produced in a burner portion of the same or a different carbon black furnace are subjected to plasma heating prior to contacting make hydrocarbon feedstock in the reactor of

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the carbon black furnace.

Claim 14 (withdrawn): The furnace carbon black producing process of claim 9 wherein the oxidant gas feed stream to the burner comprises air plus oxygen enhancement, wherein the oxygen enhancement is produced by a pressure swing adsorption process.